



Docket No.: 250312US26YA



COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

ATTORNEYS AT LAW

RE: Application Serial No.: 10/813,390
Applicants: Marcel GAUDET, et al.
Filing Date: March 31, 2004
For: SYSTEM AND METHOD OF REMOVING CHAMBER RESIDUES
FROM A PLASMA PROCESSING SYSTEM IN A DRY CLEANING
PROCESS
Group Art Unit: 1792
Examiner: K.M. STOUFFER

SIR:

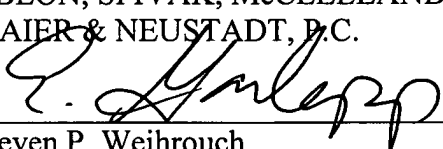
Attached hereto for filing are the following papers:

Reply Brief

Credit card payment is being made online (if electronically filed), or is attached hereto (if paper filed), in the amount of **\$0.00** to cover any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. **15-0030**. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time.

Respectfully submitted,

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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
MARCEL GAUDET, ET AL. : EXAMINER: K.M. STOUFFER
SERIAL NO: 10/813,390 :
FILED: MARCH 31, 2004 : GROUP ART UNIT: 1792
FOR: SYSTEM AND METHOD OF :
REMOVING CHAMBER RESIDUES
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REPLY BRIEF

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SIR:

This Reply Brief is in response to the Examiner's Answer dated March 16, 2009.

Appellants' independent claims narrowly recite a process gas "*consisting of* CO, CO₂, or at least one of these molecules in combination with one or more of H₂, NH₃, H₂O, N₂ or an inert gas." Thus, at least one of CO, CO₂ *must* be included in the claimed process gas, and these are the only oxygen containing molecules that can be included in the claimed process gas (except possibly H₂O). That is, the process gas in each of Claims 1, 27 and 28 cannot include O₂, which is the conventional plasma process. As discussed in the Appeal Brief, Appellants' specification shows the benefits of using this claimed process gas, which eliminates conventional O₂ from the process gas.

The cited reference to Suda et al. discloses, in detail, a process for manufacturing a magnetic head device by etching a substrate using a dry etch O₂ plasma. Suda et al. also

mentions that “[i]t is *possible* to use *other gases that contain oxygen*, such as CO, CO₂, NO, *etc.* that can generate oxygen plasma.”¹ The Examiner's Answer concludes that this amounts to a teaching of a “small group of gases that may be used as alternatives to oxygen when making oxygen plasma.” Appellants do not agree.

First, on its face, the quoted language teaches only that it is possible to use any gas that contains oxygen in the etching process. The listing of CO, CO₂ and NO provides only representative examples as evidenced by “etc.” Applicants maintain that Suda et al. discloses a broad range of oxygen gases can be used to generate a plasma, and there is no stated preference for using CO and/or CO₂ over other gases including oxygen.

Second, the general statement in Suda et al. is not a teaching that a plasma generated from any oxygen-containing gas is equivalent to a plasma generated from O₂ in the sense that all of these plasmas will achieve the same results. One of ordinary skill in the art understands that an O₂ plasma will achieve different results from a plasma generated with other gases which merely include oxygen. Even assuming that O₂ plasmas and other plasmas generated from a gas including oxygen are equivalent or “substitues” as the Examiner's Answer asserts, this can only amount to a teaching that such plasmas are equivalent in the context of the etching process of Suda et al. Applicants do not agree with the assertion in the Examiner's Answer that an etching process “is a cleaning process.”

One of ordinary skill in the art would not predict, or even expect, that plasmas which behave equivalently for an etching process would also behave equivalently in a chamber cleaning process. Applicants maintain that it would not be obvious for one of ordinary skill in the art to select CO or CO₂ from the many possible gases containing oxygen, and apply this selected gas to the chamber cleaning process of Yeh et al.

¹ Suda et al. at paragraph [0082].

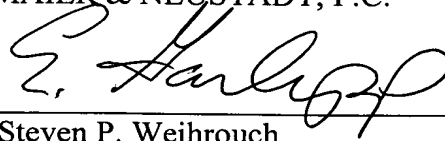
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For the reasons discussed above, and in the Appeal Brief, the rejection of Claims 1, 3-4, 7-8, and 10-30 is improper and should be withdrawn.

Respectfully submitted,

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